

REMARKS

The specification and Claim 1 have been amended to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In addition, a new set of drawings has been submitted to further illustrate a first preferred embodiment of the invention.

Claims 1 - 13 are in this application and are presented for reconsideration. In particular, in amended Claim 1, the first motor 66 drives both the first slider 64 and the second slider 65 at the same time. During the same time interval, the second motor 67 simultaneously drives the second slider 65, as well.

That is, as shown schematically in Figs. 8 and 9, the first motor 66 drives the first slider 64 to move from an initial position in Fig. 8 through a distance (a) in Fig. 9 to a second position. The second slider 65 which is connected to the first slider 64 not only moves same distance (a), but moves further along to a distance (b) by an initial driving mechanism of second motor 67 as shown in Fig. 9. The Applicant respectfully points out that the mentioned element of the Claim 1 is not a new matter but an element already mentioned on page 8, lines 19 to 24.

35 USC § 103(a):

Claims 1, 2 and 4 - 7 are rejected under 35 USC § 103(a) as being unpatentable over JP 61-106221 ("JP '221", hereinafter) alone or further in view of Minagawa et al. (U. S. Patent No. 6,520,077, Filed October 25, 2000, "Minagawa '077", hereinafter). To establish a prima

facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vareck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

JP '221 alone or further in view of Minagawa '077 does not teach nor suggest all the claim limitations. Specifically, JP'221 only shows an injection molding machine having two drive means (34 and 62) and not a "scaled" position sensor.

In an injection molding machine such as shown in the JP'221, a precise controlled position of the movable metal mold 16 is not necessary from the moment of contact by movable metal mold 16 against fixed metal mold 18. In other words, such injection molding machine requires less precision to produce the movable metal mold 16 from the time of impact to the time of actual molding. Thus, such machine detects only the timing when the movable metal mold 16 abuts against the fixed metal mold 18 and thus does not require the precision of a "scaled" position sensor as embodied in the present invention.

In the first preferred embodiment of the present invention, the press molding occurs in a two step process. In the first step, both the first slider 64 and the second slider 65 move until the dies 70 and 71 come into contact with each other wherein the second slider comes to the

position H1 (Fig. 9). Once this occurs, the first motor stops and the second motor continues actuating with controlled precision, utilizing the feedback information from the "scaled" position sensor until the second slider reaches the position shown in Fig. 10 so that die 70 presses the work piece evenly without any inclination of the second slider 65, by taking into factor the counter force from the work piece to be pressed.

Applicant respectfully notes that this preferred embodiment of the invention has a position sensor for only detecting the movable position of the second slider 65. When the second motor 67 drives the second slider 65, while the first motor 66 drives both the first slider 64 and the second slider 65, the second slider 65 is being displaced by both of the motors 66 and 67. Therefore, it is hard to detect the timing of the state as shown in Fig. 9 without detecting the position of the first slider 64.

In the present invention, the above timing is calculated without detecting the position of the first slider 64. Instead, the timing is calculated, for instance, according to the size of the work piece to be pressed and the overlapping time that the first motor 66 and the second motor 67 simultaneously drive the sliders. Once the state as shown in Fig. 9 has been reached, the "scale" is reset for starting the press by the second motor 67. Then the position of the second slider 65 is measured by "scale" in the position sensor. The Applicant notes that the position of the second slider 65 must be measured by the "scale" because the second slider 65 is greatly loaded during the state as shown in Fig. 9.

Neither JP '221 nor Minagawa '077 teach or suggest such finely calibrated movement of the press. Therefore, it is the Applicant's position that the injection mold machine as

suggested by JP '221 alone or further in view of Minagawa '077 does not suggest the current invention.

Claims 1-3, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6-54498 ("JP '498", hereinafter) in view of Minagawa '077. JP '498 in view of Minagawa '077 do not suggest nor teach the present invention. Specifically, JP '498 fails to suggest a final step which presses the workpiece in a uniform precise manner once the second slider is in contact with the workpiece.

In the first preferred embodiment of the invention as claimed, the first drive means along with the second drive means actuate the first slider and the second slider simultaneously to the position of contact for the workpiece placed between the second slider and the base plate. Then, utilizing the position signals from the position sensor, the second drive means actuates the second slider to presses the workpiece in a uniform precise manner.

Accordingly, Applicant respectfully requests that the Examiner reconsider the rejections in view of the amended and new claims and favorably consider the claims as now presented on the merits.

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for Applicant,

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and,